

# 14

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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/002,631C

DATE: 04/14/2003 P.6  
TIME: 14:30:07

Input Set : A:\10002631sequencelisting.txt

Output Set: N:\CRF4\04142003\J002631C.raw

```

3 <110> APPLICANT: Graff, Jonathon M.
4   Muenster, Matthew
6 <120> TITLE OF INVENTION: METHODS TO IDENTIFY SIGNAL SEQUENCES
9 <130> FILE REFERENCE: A34943 090495.0243
11 <140> CURRENT APPLICATION NUMBER: 10/002,631C
12 <141> CURRENT FILING DATE: 2001-10-31
14 <150> PRIOR APPLICATION NUMBER: 60/300,309
15 <151> PRIOR FILING DATE: 2001-06-21
17 <160> NUMBER OF SEQ ID NOS: 324
19 <170> SOFTWARE: FastSEQ for Windows Version 4.0
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 884
23 <212> TYPE: DNA
24 <213> ORGANISM: Homo sapiens
26 <220> FEATURE:
27 <221> NAME/KEY: unsure
28 <222> LOCATION: (608)...(884)
29 <223> OTHER INFORMATION: n = A, C, G or T
31 <400> SEQUENCE: 1
32 ggatccagtg gcaaaaaaac aaacaacaaa caacaaacaa aacaaaaacaa acaaacaacaa 60
33 aatcccacca atcttcatgg gtaaaactttc ctgctcaggg atgtaagctg actctagacc 120
34 atctcgcggt tcctgcggat agcacagcac aagatcatac tgaagatcat gccaaatatt 180
35 atgaccacgg caatgccgat gccactgcg ccgatgatgt ggaatttatt gtcgaagacc 240
36 tctttgatgg catcaggaca ggacttcacg gtgaagggtt cgagtacgtc cttcttgggg 300
37 cagatgtctg agataaactg ttccacgccc ccagccaaac cacagcagtt caacgcatag 360
38 tggatggctt tcagcgtttc ccgctggggc tcatccttgg ttttcagctt gttgtagggtg 420
39 tccttgtaaa actcctggac ttcccttaatc acctcatcct tgtgggaata tccccagatg 480
40 gccgcagcta tttcaatggc gaatatcacc aagaggaagc ccgaagaaca gtcccagcat 540
41 gcactgggac tcctgcacag ccccgagca gcccggaag cccaccagca tcatgagggc 600
W--> 42 gccggctnctg atcagaatat agactcctgt gtagaagctg gaattattat tattaagttt 660
43 cttgctcgaa gatgctcttg gnctgagagt cgaatcggaa cccttagtca atggcaagga 720
44 cagnaattcc cgggnaagc ccnaannaag aannttaaat cccgaacaag natggtattt 780
45 gntncccttt ggggcctnctn ttntaccgg nnttttgtna nggnntnact taanccnggg 840
46 ccnaacggg ttccggnant tgggggncnc ccccnantn ngnn 884
48 <210> SEQ ID NO: 2
49 <211> LENGTH: 288
50 <212> TYPE: PRT
51 <213> ORGANISM: Homo sapiens
53 <220> FEATURE:
54 <221> NAME/KEY: UNSURE
55 <222> LOCATION: (1)...(93)
56 <223> OTHER INFORMATION: Xaa = Any amino acid
58 <400> SEQUENCE: 2

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Input Set : A:\10002631sequencelisting.txt

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```

W--> 59 Xaa Xaa Xaa Gly Xaa Xaa Pro Xaa Xaa Arg Asn Pro Xaa Gly Pro Xaa
60 1 5 10 15
61 Xaa Lys Xaa Xaa Xaa Lys Xaa Pro Val Xaa Xaa Xaa Ala Pro Lys
62 20 25 30
63 Gly Xaa Lys Tyr His Xaa Cys Ser Gly Phe Xaa Xaa Leu Xaa Xaa Gly
64 35 40 45
65 Leu Xaa Arg Glu Xaa Leu Ser Leu Pro Leu Thr Lys Gly Ser Asp Ser
66 50 55 60
67 Thr Leu Xaa Pro Arg Ala Ser Ser Ser Lys Lys Leu Asn Asn Asn Asn
68 65 70 75 80
69 Ser Ser Phe Tyr Thr Gly Val Tyr Ile Leu Ile Xaa Ala Gly Ala Leu
70 85 90 95
71 Met Met Leu Val Gly Phe Leu Gly Cys Cys Gly Ala Val Gln Glu Ser
72 100 105 110
73 Gln Cys Met Leu Gly Leu Phe Phe Gly Leu Pro Leu Gly Asp Ile Arg
74 115 120 125
75 His Asn Ser Cys Gly His Leu Gly Ile Phe Pro Gln Gly Gly Asp Gly
76 130 135 140
77 Ser Pro Gly Val Leu Gln Gly His Leu Gln Gln Ala Glu Asn Gln Gly
78 145 150 155 160
79 Ala Pro Ala Gly Asn Ala Glu Ser His Pro Leu Cys Val Glu Leu Leu
80 165 170 175
81 Trp Phe Gly Trp Gly Arg Gly Thr Val Tyr Leu Arg His Leu Pro Gln
82 180 185 190
83 Glu Gly Arg Thr Arg Asn Leu His Arg Glu Val Leu Ser Cys His Gln
84 195 200 205
85 Arg Gly Leu Arg Gln Ile Pro His His Arg Arg Ser Gly His Arg His
86 210 215 220
87 Cys Arg Gly His Asp Ile Trp His Asp Leu Gln Tyr Asp Leu Val Leu
88 225 230 235 240
89 Cys Tyr Pro Gln Glu Pro Arg Asp Gly Leu Glu Ser Ala Tyr Ile Pro
90 245 250 255
91 Glu Gln Glu Ser Leu Pro Met Lys Ile Gly Gly Ile Phe Cys Leu Phe
92 260 265 270
93 Val Leu Phe Cys Leu Leu Phe Val Val Cys Phe Phe Ala Thr Gly Ser
94 275 280 285
97 <210> SEQ ID NO: 3
98 <211> LENGTH: 529
99 <212> TYPE: DNA
100 <213> ORGANISM: Homo sapiens
102 <400> SEQUENCE: 3
103 actgatcttc agcatctttt actttcacca gcgtttctgg gtgaaagaaa acattcccca 60
104 gggaagacaa aagcaacaag cttagggctg acatcaagat acctcccaga aagaggtagc 120
105 tacggcgctt ggcatagagt gactgaggg tgaagcaggt aaagatcatt gccgtgcca 180
106 tgaaagcagt gggaaggatg ctggggttga cagcaatata aaactccagg gcagggccca 240
107 ggccaactcc tgtaaggaat gcaaattccag caagaagtcc cagtcttttc tgttcagttt 300
108 catggctatg aggtgttgcc atcagccaaa tcatcaatat caggagccc aaggcagaca 360
109 gcaggccagc ctgaatgaaa tgagtgaaca tatggacata ggcccctgca gccgccacaa 420
110 acatacaaag ggcaaaactt gcatagacct tcttcagggtg ctgctgcgtt gacgggggta 480

```

## RAW SEQUENCE LISTING

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Input Set : A:\10002631sequencelisting.txt

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```

111 tatgagaaaa ttttaaaagc gcatcaaagg tgcacgcggc cgcgaattc 529
113 <210> SEQ ID NO: 4
114 <211> LENGTH: 162
115 <212> TYPE: PRT
116 <213> ORGANISM: Homo sapiens
118 <400> SEQUENCE: 4
119 Glu Phe Ala Ala Ala Ser Thr Phe Asp Ala Leu Leu Lys Phe Ser His
120 1 5 10 15
121 Ile Thr Pro Ser Thr Gln Gln His Leu Lys Lys Val Tyr Ala Ser Phe
122 20 25 30
123 Ala Leu Cys Met Phe Val Ala Ala Ala Gly Ala Tyr Val His Met Val
124 35 40 45
125 Thr His Phe Ile Gln Ala Gly Leu Leu Ser Ala Leu Gly Ser Leu Ile
126 50 55 60
127 Leu Met Ile Trp Leu Met Ala Thr Pro His Ser His Glu Thr Glu Gln
128 65 70 75 80
129 Lys Arg Leu Gly Leu Leu Ala Gly Phe Ala Phe Leu Thr Gly Val Gly
130 85 90 95
131 Leu Gly Pro Ala Leu Glu Phe Cys Ile Ala Val Asn Pro Ser Ile Leu
132 100 105 110
133 Pro Thr Ala Phe Met Gly Thr Ala Met Ile Phe Thr Cys Phe Thr Leu
134 115 120 125
135 Ser Ala Leu Tyr Ala Arg Arg Arg Ser Tyr Leu Phe Leu Gly Gly Ile
136 130 135 140
137 Leu Met Ser Ala Leu Ser Leu Leu Leu Leu Ser Ser Leu Gly Asn Val
138 145 150 155 160
139 Phe Phe
143 <210> SEQ ID NO: 5
144 <211> LENGTH: 454
145 <212> TYPE: DNA
146 <213> ORGANISM: Homo sapiens
148 <400> SEQUENCE: 5
149 ggatccgggc caaaaaaat aaacagcaac ttcatagaca aaaaaggaaa aaaaaagaaa 60
150 ccttttatct ttggcctttt taaccatctc atacaaacca actacttata gtacagctaa 120
151 gtacatacac aaaaaagtta ctggaatgct cggaataaga ttgtttttct gttgtcattt 180
152 ttgctttttt tacaaggttt tttttctcct ttgagattat aatgaacatg gtcacaccac 240
153 aagtaaagtc agaagtagga cagagaacgc tccgaaggct ggtttggtca tccgagatca 300
154 ttaaaaatgg ctgaccctaa caatatgtac aaaaatataa aatgtaaata aaaaatacaa 360
155 acaaatttcc tttttaagtc actttaagaa aaaaagcagg gccttgggaag ttttggttct 420
156 tttttcctcc cctggtcgac gcggccgcga attc 454
158 <210> SEQ ID NO: 6
159 <211> LENGTH: 144
160 <212> TYPE: PRT
161 <213> ORGANISM: Homo sapiens
163 <400> SEQUENCE: 6
164 Asn Ser Arg Pro Arg Arg Pro Gly Glu Glu Lys Arg Thr Lys Thr Ser
165 1 5 10 15
166 Lys Ala Leu Leu Phe Phe Leu Lys Tyr Phe Lys Lys Glu Ile Cys Leu
167 20 25 30

```

## RAW SEQUENCE LISTING

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Input Set : A:\10002631sequencelisting.txt

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```

168 Tyr Phe Leu Phe Thr Phe Tyr Ile Phe Val His Ile Val Arg Val Ser
169          35          40          45
170 His Phe Ser Arg Met Thr Lys Pro Ala Phe Gly Ala Phe Ser Val Leu
171          50          55          60
172 Leu Leu Thr Leu Leu Val Pro Cys Ser Leu Ser Gln Arg Arg Lys
173 65          70          75          80
174 Lys Thr Leu Lys Lys Gln Lys Gln Gln Lys Asn Asn Leu Ile Pro Ser
175          85          90          95
176 Ile Pro Val Thr Phe Leu Cys Met Tyr Leu Ala Val Leu Val Val Gly
177          100          105          110
178 Leu Tyr Glu Met Val Lys Lys Ala Lys Asp Lys Arg Phe Leu Phe Phe
179          115          120          125
180 Ser Phe Phe Val Tyr Glu Val Ala Val Tyr Phe Phe Trp Pro Gly Ser
181          130          135          140
184 <210> SEQ ID NO: 7
185 <211> LENGTH: 478
186 <212> TYPE: DNA
187 <213> ORGANISM: Homo sapiens
189 <400> SEQUENCE: 7
190 ggatccaagc atcaggagca ggcaaggaga accaaaagac atcaagaaac cgatttgctt 60
191 gagaaaagca gcgattcttc ctttcagagt tctccatggc tcagaaaatg cccaagacat 120
192 catgtatgtg acttagatac tgctttttgg gaggttaaga gtacgatgaa gaacttaaga 180
193 tgacgataag agtctaaatt tttagtttca aggtttcaat agaattgtga tatattcaaa 240
194 acttttcaaaa aggacagtgt ttagaaaggg taaaactagg acacagaaaa cactgggaat 300
195 taccacgacc cccaagtgtc tccggctcca ggaaataacc attcatgtgt ttgctggagg 360
196 tcacacaatt ttccctattt acctggtgca aaatgactca tcacttccca aaagcttctt 420
197 ttcaaaccac gattttccca tttattttgg tccaatgcgt cgacgcggcc gcgaattc 478
199 <210> SEQ ID NO: 8
200 <211> LENGTH: 150
201 <212> TYPE: PRT
202 <213> ORGANISM: Homo sapiens
204 <400> SEQUENCE: 8
205 Asn Ser Arg Pro Arg Arg Arg Ile Gly Pro Lys Met Gly Lys Ser Trp
206 1          5          10          15
207 Phe Glu Lys Lys Leu Leu Gly Ser Asp Glu Ser Phe Cys Thr Arg Gly
208          20          25          30
209 Lys Ile Val Pro Pro Ala Asn Thr Met Val Ile Ser Trp Ser Arg Lys
210          35          40          45
211 His Leu Gly Val Val Val Ile Pro Ser Val Phe Cys Val Leu Val Leu
212          50          55          60
213 Pro Phe Leu Asn Thr Val Leu Phe Glu Ser Phe Glu Tyr Ile His Ile
214 65          70          75          80
215 Leu Leu Lys Pro Asn Lys Phe Arg Leu Leu Ser Ser Ser Val Leu His
216          85          90          95
217 Ala Thr Leu Asn Leu Pro Lys Ser Ser Ile Val Thr Tyr Met Met Ser
218          100          105          110
219 Trp Ala Phe Ser Glu Pro Trp Arg Thr Leu Lys Gly Arg Ile Ala Ala
220          115          120          125
221 Phe Leu Lys Gln Ile Gly Phe Leu Met Ser Phe Gly Ser Pro Cys Leu

```

## RAW SEQUENCE LISTING

DATE: 04/14/2003

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Input Set : A:\10002631sequencelisting.txt

Output Set: N:\CRF4\04142003\J002631C.raw

```

222      130      135      140
223 Leu Leu Met Leu Gly Ser
224 145      150
227 <210> SEQ ID NO: 9
228 <211> LENGTH: 770
229 <212> TYPE: DNA
230 <213> ORGANISM: Homo sapiens
232 <220> FEATURE:
233 <221> NAME/KEY: unsure
234 <222> LOCATION: (545)...(757)
235 <223> OTHER INFORMATION: n = A, C, G or T
237 <400> SEQUENCE: 9
238 ggatcctgct gtgttggtct ggtagcttcg gctgctgtaa gtgacaagtt gtagttgcct 60
239 gttgagttgg tccagccctg ggctgacaag ggtgagatct gcctgaccct ctccagttag 120
240 agtaactcca gtcacttccc ctgccacgtc ccaggtgcct agggaggcag tcaggttcac 180
241 ctggtatacc tcttgaccag aagctgcctg aaggctcagc cctggcacca agatgctcct 240
242 gaggggctga acttccacac cctgtagggg gtactggagc ggggagttgg caggggctat 300
243 gagcagctgg tcagctgggg actggctcct cgacagaaaag gcctggaact cctgctctct 360
244 tgtggcagag gcagccctca gctctgcagg gtcaaaggcc ttggtgaggt caatagctcg 420
245 gacttgtttc tggaagggga gggggaggcc cccccactg gactcacaac tgcagttgtt 480
246 ccaagccagc agccccacta cttgctcctt gatcctgacc gggatgtgtg cctagcgggg 540
W--> 247 ctcangagca agatctggca gctcgggcct gcggggggcct tgcggggggcg cccacgggcg 600
248 aagaagtacc cggangcccg ggcgccgtnc cgggtgctcg cgtacaggan cccancgag 660
249 gccaaagccna ccagaaggac caaaacgcac aagggcccg cgggccaacc acatcctgct 720
250 aacctntaag gacggcaaaa ttcggnccgg cntnancgg gccggaatta 770
252 <210> SEQ ID NO: 10
253 <211> LENGTH: 255
254 <212> TYPE: PRT
255 <213> ORGANISM: Homo sapiens
257 <220> FEATURE:
258 <221> NAME/KEY: UNSURE
259 <222> LOCATION: (5)...(75)
260 <223> OTHER INFORMATION: Xaa = Any amino acid
262 <400> SEQUENCE: 10
W--> 263 Ile Pro Ala Gly Xaa Xaa Pro Xaa Arg Ile Leu Pro Ser Leu Xaa Val
264 1      5      10      15
265 Ser Arg Met Trp Leu Ala Arg Arg Ala Leu Val Arg Phe Gly Pro Ser
266      20      25      30
267 Gly Xaa Leu Gly Leu Xaa Gly Xaa Pro Val Arg Glu His Pro Xaa Arg
268      35      40      45
269 Arg Pro Gly Xaa Arg Val Leu Leu Ala Pro Trp Ala Pro Pro Gln Ser
270      50      55      60
271 Pro Arg Arg Pro Glu Leu Pro Asp Leu Ala Xaa Glu Pro Arg Ala His
272 65      70      75      80
273 Ile Pro Val Arg Ile Lys Glu Gln Val Val Gly Leu Leu Ala Trp Asn
274      85      90      95
275 Asn Cys Ser Cys Glu Ser Ser Gly Gly Gly Leu Pro Leu Pro Phe Gln
276      100     105     110
277 Lys Gln Val Arg Ala Ile Asp Leu Thr Lys Ala Phe Asp Pro Ala Glu

```

**RAW SEQUENCE LISTING ERROR SUMMARY**  
PATENT APPLICATION: **US/10/002,631C**

DATE: 04/14/2003  
TIME: 14:30:08

Input Set : A:\10002631sequencelisting.txt  
Output Set: N:\CRF4\04142003\J002631C.raw

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 608,682,724,735,743,746,747,753,754,771,782,784,798,800,804  
Seq#:1; N Pos. 811,812,819,821,824,825,827,834,837,844,857,859,867,869,876  
Seq#:1; N Pos. 878,880,881,883,884  
Seq#:2; Xaa Pos. 1,2,3,5,6,8,9,13,16,17,19,20,21,22,24,27,28,29,34,38,43,44  
Seq#:2; Xaa Pos. 46,47,50,53,67,92  
Seq#:9; N Pos. 545,615,629,650,656,669,726,746,753,755,757  
Seq#:10; Xaa Pos. 5,6,8,15,34,38,40,47,52,75  
Seq#:13; N Pos. 527,638,682,685,703,734,746,766,805,810,831,832,841,846,849  
Seq#:13; N Pos. 856,858,867,888,895,897,900,901,904,910,916,931,932,933,938  
Seq#:13; N Pos. 945  
Seq#:14; Xaa Pos. 2,4,6,14,15,18,25,28,31,32,37,43,44,57,64,68,84,100,135  
Seq#:15; N Pos. 571  
Seq#:19; N Pos. 634,662,689,700,710,721,758,783,804,840,859,884,885,889,919  
Seq#:20; Xaa Pos. 3,12,14,29,41,48,56,71,73,76,84,93  
Seq#:25; N Pos. 582,602  
Seq#:26; Xaa Pos. 26,33  
Seq#:27; N Pos. 613,651,695,749,757,769,776,785,787,812,818,830,853,874,882  
Seq#:27; N Pos. 908,915  
Seq#:28; Xaa Pos. 1,3,12,14,20,27,31,33,40,41,44,46,50,53,67,82,93  
Seq#:29; N Pos. 611,636,663,720,772,814,823,843,874,876,885,896,908,909,916  
Seq#:29; N Pos. 928  
Seq#:30; Xaa Pos. 1,8,12,16,19,30,70,87,96,104  
Seq#:31; N Pos. 610,628,686,747,781,789,795,821,842,871,893,897,918  
Seq#:32; Xaa Pos. 1,8,16,32,40,42,45,56,75,94,100  
Seq#:33; N Pos. 596,610,735,740,767,771,786,790,803,805,815,816,817,819,825  
Seq#:33; N Pos. 834,835,842,847,848,854,857,858,859,861,863,870,871,875,876  
Seq#:33; N Pos. 877,884,889,891,898,908,913,914,915  
Seq#:34; Xaa Pos. 1,3,6,9,11,13,14,15,16,18,19,20,21,23,25,27,28,31,33,34  
Seq#:34; Xaa Pos. 36,37,41,43,48,49,57,59,103  
Seq#:35; N Pos. 596,610,735,740,767,771,786,790,803,805,815,816,817,819,825  
Seq#:35; N Pos. 834,835,842,847,848,854,857,858,859,861,863,870,871,875,876  
Seq#:35; N Pos. 877,884,889,891,898,908,913,914,915  
Seq#:37; N Pos. 586  
Seq#:39; N Pos. 634,653,690,696,726,731,744,765,772,780,790,802,832,855,872  
Seq#:39; N Pos. 880,895,896  
Seq#:40; Xaa Pos. 1,9,15,22,40,45,51,55,57,67,69,81,86  
Seq#:41; N Pos. 200,211  
Seq#:42; Xaa Pos. 121,125  
Seq#:47; N Pos. 7,9,12,14,15,20,21,35,36,37,38,76,103,115,120,121,185,190  
Seq#:47; N Pos. 192,198,205,209,237,243,248,260,267,269,272,287,290,297,298  
Seq#:47; N Pos. 300,303,305,314,315,316,320,326,331,332,333,341,342,352,353  
Seq#:47; N Pos. 359,364,365,368,378,383,385,400,414,440,476,487,497,524,545  
Seq#:47; N Pos. 550,590,594  
Seq#:48; Xaa Pos. 2,3,17,24,33,40,52,61,70,71,73,76,77,79,81,83,86,88,90,92

**RAW SEQUENCE LISTING ERROR SUMMARY**  
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Input Set : **A:\10002631sequencelisting.txt**  
Output Set: **N:\CRF4\04142003\J002631C.raw**

Seq#:48; Xaa Pos. 95,96,97,98,100,101,106,107,108,110,114,116,118,127,128  
Seq#:48; Xaa Pos. 131,133,135,155,156,157,169,182,183,188,190,191,192  
Seq#:49; N Pos. 191,538  
Seq#:50; Xaa Pos. 107  
Seq#:51; N Pos. 512,547,555,563,580,614,624,625,630,632,639,650,666,670,671  
Seq#:51; N Pos. 672,674,679,680,682,684,685,686,693,697,701,702,705,706,708  
Seq#:51; N Pos. 712,713,714,715,720,721,723,726,728,730,731,734,735,737,740

## VERIFICATION SUMMARY

DATE: 04/14/2003

PATENT APPLICATION: US/10/002,631C

TIME: 14:30:08

Input Set : A:\10002631sequencelisting.txt

Output Set: N:\CRF4\04142003\J002631C.raw

L:42 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:600  
M:341 Repeated in SeqNo=1  
L:59 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0  
M:341 Repeated in SeqNo=2  
L:247 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:540  
M:341 Repeated in SeqNo=9  
L:263 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0  
M:341 Repeated in SeqNo=10  
L:360 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:480  
M:341 Repeated in SeqNo=13  
L:380 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0  
M:341 Repeated in SeqNo=14  
L:442 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:540  
L:532 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:600  
M:341 Repeated in SeqNo=19  
L:550 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:0  
M:341 Repeated in SeqNo=20  
L:685 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:540  
M:341 Repeated in SeqNo=25  
L:702 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:16  
M:341 Repeated in SeqNo=26  
L:751 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:600  
M:341 Repeated in SeqNo=27  
L:769 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0  
M:341 Repeated in SeqNo=28  
L:822 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:600  
M:341 Repeated in SeqNo=29  
L:840 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:0  
M:341 Repeated in SeqNo=30  
L:903 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:600  
M:341 Repeated in SeqNo=31  
L:921 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:0  
M:341 Repeated in SeqNo=32  
L:981 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:540  
M:341 Repeated in SeqNo=33  
L:1000 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0  
M:341 Repeated in SeqNo=34  
L:1060 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:540  
M:341 Repeated in SeqNo=35  
L:1110 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:540  
L:1166 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:600  
M:341 Repeated in SeqNo=39  
L:1183 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:0  
M:341 Repeated in SeqNo=40  
L:1237 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:180  
L:1271 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:112  
L:1375 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47 after pos.:0  
M:341 Repeated in SeqNo=47



**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/002,631C

DATE: 04/14/2003

TIME: 14:30:08

Input Set : A:\10002631sequencelisting.txt

Output Set: N:\CRF4\04142003\J002631C.raw

L:1397 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:0  
M:341 Repeated in SeqNo=48